Bonneville Power Administration
Fish and Wildlife Program FY98 Watershed Proposal Form

Section 1. General administrative information

Title Teach adults to become holistic Master Watershed Stewards

Bonneville project number, if an ongoing project 8056

Business name of agency, institution or organization requesting funding
Washington Governor's Council on Environmental Education

Business acronym (if appropriate) GCEE

Proposal contact person or principal investigator:

Name	Beverly Isenson, Special Assistant, GCEE
Mailing Address	PO Box 40900
City, ST Zip	Olympia WA 98504-0900
Phone	(360) 407-7317
Fax	(360) 407-7333
Email address	BeverlyI@Parks.wa.gov

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
WSU Cooperative Extension	Hulbert Hall 323	Pullman WA 99164-6236	Jerry Newman
-	-	-	-

NPPC Program Measure Number(s) which this project addresses.
7.6b.6

NMFS Biological Opinion Number(s) which this project addresses.

Other planning document references.

Clark county area program: Joint Natural Resources Cabinet Outreach & Education Plan for Lower Columbia Steelhead Conservation Initiative includes this program; letters of commitment from WSU Cooperative Extension-Clark, Clark Co. Dept. Of Community Development, Clark County Conservation District, and from Dave Howard, Dept. Of Ecology outreach and education lead for the Lower Columbia Steelhead Conservation Initiative.

Yakima-Benton program: WSU Cooperative Extension water quality agents team has committed $4,900 from team budget; leadership commitments from WSU Cooperative Extension-Yakima County, from Dr. Robert Stevens, PhD, WSU Research Station-Prosser, and from Ray Hennekey, Dept. Of Ecology Local Action Team Leader for the (entire) Yakima watershed.

For overall program support, commitment letters from Dr. Margaret Tudor, PhD., Washington Dept. Of Fish & Wildlife educator; Nina Carter, program manager, WDFW volunteer services and education.

Subbasin.

1. Lower Yakima (Yakima and Benton counties); 2. Lower Columbia (Clark county).

Short description.

Teach and train adults to work as Master Watershed Stewards in their watersheds, focusing on science (70%), community organization and leadership skills (30%), in order to increase community capacity to address fish and wildlife and water issues.. Students provide at least 50 hours of community service, ranging from habitat restoration to public education..

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
+	Anadromous fish		Construction	X	Watershed
+	Resident fish		O & M		Biodiversity/genetics
+	Wildlife	+	Production		Population dynamics
+	Oceans/estuaries	+	Research	+	Ecosystems
+	Climate	+	Monitoring/eval.		Flow/survival
X	Other - watershed education	X	Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	+	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Briefly describe measurable objectives and the tasks needed to complete each objective. Use Column 1 to assign numbers to objectives (for reference in the next table), and Column 3 to assign letters to tasks. Use Columns 2 and 4 for the descriptive text. Objectives do not need to be listed in any particular order, and need only be listed once, even if there are multiple tasks for a single objective. List only one task per row; if you need more rows, press Alt-Insert from within this table.

Obj 1,2, 3	Objective	Task a,b,c	Task
1	Teach at least 25 adults in each watershed about the science of their watersheds and leadership of their communities	a	Coop Ext. organizes advisory team, teaching team & core curriculum, recruits students, holds course
2	Support class 'graduates' to provide community service and thereby increase community capacity to deal with issues	b	Assists in determining suitable projects, arranging collaboration with resource agencies, civic groups
3	Build corps of stewards	c	Facilitates team-building and increases community capacity

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	03-04/1998	06-07/1998	80%
2	06-07/1998	09/1998	15%
3	06-07/1998	06-07/1999	5%

Schedule constraints.

Milestones: Course completed, stewards perform community service.

Completion date.

GCEE intends to make this course as permanent and widespread as 4-H, and will seek funds from many sources for many years, to spread the program statewide and offer it to other states in the Columbia River watershed.

Section 5. Budget

List FY99 budget amounts for each category. If an item needs more explanation, provide it in the Note column. If the project uses PIT tags, include the cost ($2.90/tag). **Be sure to enter a total on the last line: this is the amount of your budget request.**

Item	Note	FY98
Personnel	Contracted to WSU	$36,000
Fringe benefits	" " "	11,900
Supplies, materials, non-expendable property	" " "	9,000
Operations & maintenance	-	-
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	-	-
PIT tags	# of tags:	-
Travel	Contracted to WSU	2,000
Indirect costs	$15,314 contracted to WSU	20,509
Subcontracts		
Other	-	-
TOTAL	-	79,409

Outyear costs

Outyear costs	FY1999	FY2000	FY01	FY02
Total budget	81,791	84,245	86,772	89,375
O&M as % of total	-	-	-	-

Section 6. Abstract

The Master Watershed Stewards program builds educates groups of 25 to 30 adults per course about the science and social aspects of their watershed over a three-month period, then provides continuing support as the graduates undertake a minimum of 50 hours of community service. The course is focused 70% on science. The goal is to increase community capacity by educating a corps of adults with the scientific knowledge and skills, understanding and motivation. They will become leaders of community programs and projects aimed at solving the problems arising from human interaction with the rest of the natural environment. Teaching and learning is based on principles of Action Research,

Community Problem-Solving, developed at the University of Michigan School of Natural Resources.

Special emphasis is given to water, fish and wildlife, and to providing knowledge and skills, as appropriate. Scientists assist in teaching the course, and assist graduates to complete their community service. This can include stream surveys, habitat restoration, vertebrate and water monitoring, educating the public through presentations to others, organizing issues conferences and public service projects, as deemed appropriate to the watershed and community.

Results will include graduates undertaking community service within weeks after the course ends, in conjunction with agencies and civic groups. Results are monitored and evaluated by WSU Cooperative Extension county leaders, through written questionnaires to students at the start and close of the course, querying their expectations and knowledge. This is followed by recording their community service contributions for a one-year period. Experience shows that community service continues, generally for three to ten years.

Results will be monitored by WSU's project manage and county staff, using Bennett's hierarchy, and documenting student evaluation of personal change, and student community service and leadership.

Section 7. Project description

a. Technical and/or scientific background.

This program will enable ordinary citizens to understand the science of the 1994 Fish & Wildlife Program, the NMFS Biological Opinion, and other programs; to understand treaties, laws, policies and regulations about water, fish and wildlife and land use; and to constructively use that new understanding and knowledge by leading their communities to address the science, treaties, laws, policies and regulations surrounding fish and wildlife and water issues.

b. Proposal objectives.

Type here (provide answers in paragraph form)

1. Twenty-five to 30 adults in each watershed will be educated on the science, civics and leadership of their watersheds. Specific training such as stream surveys, fish and wildlife and habitat monitoring may also be included in the course, if found appropriate to the watershed by the local advisory teams..
2. They will perform a minimum of 50 hours of community service, using their new knowledge. WSU Cooperative Extension and participating agencies and civic groups will

assist in helping develop or providing opportunities, arranging for additional training or technical assistance where appropriate.
3. A course curriculum will be developed for each watershed, including basic natural science principles, and principles of community leadership and civics, with additional curriculum units appropriate to each watershed.
4. Course graduates will increase the capacity of the community through their leadership as knowledgeable, skilled residents.

c. Rationale and significance to Regional Programs.

The science of the Columbia River Basin Fish & Wildlife Program must be understood by residents of the river basin, if watershed management issues and policies are to be given serious consideration by them and their chosen policy-makers. That also holds true for supporting continued research. Master Watershed Stewards will enable residents to gain that knowledge and understanding, and to increase their community's capacity to make rational decisions on FWP, the Endangered Species Act, current and potential listings under ESA, and water issues..

d. Project history

Not applicable.

e. Methods.

GCEE assumes that in every watershed are people who want to increase their knowledge, understanding and skills about the natural world and human habitation, that they are community-service minded, that education should meet their wants, and that WSU Cooperative Extension is highly qualified to provide that education and support those people in sharing their knowledge and skills with their communities. Master Watershed Stewards is designed on that assumption, as well as the successful models of 4-H leadership training, Master Gardeners, and other long-lasting adult education programs.

How Master Watershed Stewards Works

In each county, a community educator/organizer, based at the Cooperative Extension office, puts together an advisory team from the community. This will include local citizens supportive of watershed education and representative of the main socioeconomic forces in the community, agency experts already based in or known to the community, and knowledgeable educators. The team establishes a core curriculum, determines which aspects of the watershed will become part of the curriculum, sets up the criteria for admission to the course and ground rules for teaching about controversial issues, advises on field trip sites, arranges presenters for the class sessions and takes responsibility for educating the community that this kind of education is about to begin.

Core curriculum topics will include: history of human settlement and development; hydrology; geology; river dynamics; groundwater, aquifers and hydraulic continuity; fish and wildlife habitat; affect of human uses; forest, range and wetlands resources and management; watershed management; livestock production and grazing management; agriculture and irrigation; hydroelectric systems; water quantity and quality issues, monitoring and types; landowners perspectives and experiences, including growth and multiple use issues and implications, hobby farms and recreation use; population; participating in watershed management, jurisdictions; basic policy, laws and treaties; basics of watershed restoration; teaching/reaching others effectively; developing quality educational presentations and displays. Additional curriculum units will be offered as appropriate to the watershed. These can include: estuaries, river transportation, flooding and other topics.

The team arranges field trips to examine land and water use. This can include irrigation diversions and river siphons, flood areas, forested landscapes, farming with a variety of irrigation systems and alternatives, settling ponds and other water quality protection methods; mines, hatcheries, dams, examples of restored riparian habitat; water quality laboratories and treatment plants; and more.

The course includes class sessions and field trips. Depending on the advisory team recommendations, classes can run days or week nights, over a period of two to three months. Participants are solicited through local news stories in papers and on radio and through WSU Cooperative Extension's newsletters and distribution of a course brochure. Participants are obligated to attend 90% of the sessions, and to commit to 50 hours of community service. Their aspirations are examined in the first class, and their knowledge gain is evaluated at the close of the course.

Following the end of classes, Cooperative Extension works with graduates to establish regular group meetings, pursue community service opportunities, provide continuing support and.access to additional education, and secure technical assistance for service projects.

Results can be anticipated from similar courses offered in Island and Jefferson counties since 1988, and Kittitas county in 1997. Results these include restorating habitat, securing a forested riparian area and stream and restoring a salmon run, inventorying large woody debris in streams, preparing a realtors brochure for new homeowners, establishing a recycling program for a county government, setting up a beach monitoring program to gauge changes in intertidal areas, developing a beach field trip curriculum for school classes, guiding recreational beach walks, giving public presentations on understanding the watershed, setting up public issues forums, developing educational displays and staffing them at public events, and planning river and shoreline clean-ups,

f. Facilities and equipment.

No special equipment or facilities will be needed.

g. References.

Not applicable.

Section 8. Relationships to other projects

Master Watershed Stewards will complement all the work undertaken under the FWP, and does not duplicate any known program or project.

Master Watershed Stewards is a collaboration of the agencies of the Governor's Council on Environmental Education (Washington Departments of Ecology, Fish & Wildlife, Health, Natural Resources, Transportation, Interagency Committee on Outdoor Recreation, State Parks & Recreation Commission, Puget Sound Water Quality Action Team, Superintendent of Public Instruction, Washington State University Cooperative Extension, National Park Service, US Fish & Wildlife Service, US Geological Survey) with county Cooperative Extension staff and their local advisory teams. The teams vary with the county, and include local governments and utilities, Yakama Indian Nation, USDA Natural Resource Conservation Service, Bureau of Reclamation, science faculty from Central Washington University and other universities, historical societies, conservation districts, natural resource-based businesses, land developers, public policy-makers, staff from the Governor's Council agencies, and others.

Section 9. Key personnel

Beverly Isenson - Principal investigator

As principal investigator, Mrs. Isenson will insure that the program objectives are met, work and evaluations are completed. This will be undertaken in the context of establishing Master Watershed Stewards as a permanent institutionalized adult education course in all of Washington state, and serving as a template for adult education in the entire Columbia watershed.

Beverly Isenson has been the Special Assistant to the Governor's Council on Environmental Education, since 1991, shortly after GCEE was established. Her expertise and accomplishments are in fostering enlightened citizen knowledge and understanding of rights and responsibilities in a democracy, strengthening civic participation in public policy-making, community organizing, media relations, community relations, and educational media production. She has concentrated on issues of urban development, natural resource use, socio-economic and environmental sustainability, and education about these issues.
As Special Assistant to GCEE, Mrs. Isenson is responsible for assisting the Council become a catalyst for making environmental education relevant to environmental issues, coordinating efforts to assess needs, developing new approaches and policies , raising standards, building watershed-wide education plans and programs in Lower Hood Canal,

Lake Roosevelt and other watersheds, and guiding development of a new statewide volunteer environmental monitoring network, Watch on Washington.

Mrs. Isenson's earlier recent employment included serving as executive director of Washington Physicians for Social Responsibility, Seattle, 1989 to 1991; as a principal partner is Isenson Associates, a public and community relations and media relations firm in Anchorage, Alaska, 1984 to 1989; executive director, Alaska Democratic Party, 1983 to 1984; media and community relations officer to the Mayor of Anchorage, responsible for public education on a major urban redevelopment program of cultural and recreational improvements, 1978 to 1981; and other public service and public issue-related work.

Mrs. Isenson holds a Bachelor of Arts degree in political science from UCLA, 1958. Honors and accomplishments include: Tobenkin Award, from Columbia School of Journalism, for a series on Alaska's Indians, Aleuts and Eskimos, "The Village People," in the Anchorage Daily News; honorary lifetime membership, American Institute of Architects, Alaska chapter, for writing and photography on urban development issues; founding member of KSKA-TV, the first non-university public television station in Alaska, 1975; organized public pressure to bring public kindergarten to Anchorage, 1966-69.

Jerry Newman - Project Manager

As project manager, Mr. Newman will be responsible for overseeing the activities of team leaders in Clark county and the Lower Yakima valley (Yakima and Benton counties), with special emphasis on support for Stewards to work effectively in their communities. An additional emphasis will be to secure these initial programs as foundations for permanent Stewards programs.

Mr. Newman has been a leader in developing 4-H program leadership training for adults, with special emphasis on animal and environmental sciences education, directed to serving multi-cultural youth.

Since 1979, Mr. Newman has been the Extension Youth Development Specialist in the Department of Human Development at Washington State University Cooperative Extension. He is responsible for educational support to more than 4,000 adult volunteer leaders and 20,000 youth in the Washington State 4-H Youth Program.

Mr. Newman has frequently received grants to support his work. Recent programs and grants are: Teaching Students in the Basic Sciences Using Environmental and Food Productions Examples, $57,300 from the Washington State Superintendent of Public Instruction, 1997; Western Regional Extension Youth Science Education Network, $23,000, Michigan State University, 1996; Master Watershed Stewards Program, $67,000 from Washington State Parks & Recreation Commission (fiscal agent for GCEE) 1996. His educational development programs have received more than $1.2 millions from private and public foundations and public agencies. He has been a developer, with colleagues, of youth curriculum on food safety, animal husbandry, and environmental science. Mr.

Newman is co-developer of EM*POWER, a nationally esteemed youth environmental science curriculum, has been taught through national satellite broadcasts, invitational workshops and conference presentations.

Mr. Newman has a Masters of Science degree from California State Polytechnic University, San Luis Obispo, 1972; and a Bachelor of Science, University of California, Davis, 1963.

Publications and invited presentations have included:
Nelson, D., Busboom, J., Newman, J., Hiller, J., and Hillers, V. 1997. Food Animal Product Safety; A Youth Education Program, *J. Animal Sci*, p154; Newman, J. 1996. Quality Assurance and Animal Care, *National Youth Livestock Program Ethics Symposium,* p 43; Newman, J. 1996. Get A Jump On Germs, *National Youth Science* Symposium, Orlando, FL; Newman, J. 1995. *EM*POWER*, Idaho Water Research Institute, University of Idaho, 122 pp., Moscow, ID.

Margaret Tudor, Ph.D. - Statewide Program Team

Margaret Tudor will be the key fish and wildlife education advisory on the Master Watershed Stewards statewide team.

Dr. Tudor is the wildlife educator for Washington Department of Fish & Wildlife. In that position since 1992, she develops programs which meet the fish and wildlife education needs in Washington. She coordinates Washington's Project WILD program, training and managing 30 facilitators who offer Project WILD workshops to educators. She is also education director of the NatureMapping Program, for which she creates curriculum and runs workshops to train citizens and educators how to collect, analyze and apply data on fish and wildlife. She develops education programs for adults which focus on stewardship opportunities, and has been integral to the development of Master Watershed Stewards.

From 1984 to May 1988, Dr. Tudor developed and taught environmental education to future teachers at the University of Wisconsin - Milwaukee. It was the first course of its kind, and a significant part of Wisconsin's ground breaking program to offer environmental education in the entire school system. Dr. Tudor has been a high school science teacher, environmental education consultant, and environmental manager.

Dr. Tudor's education includes a Bachelor of Science in Geology and Zoology, University of Adelaide, South Australia, 1974; Dip. Education in science teaching, University of Adelaide, 1976; Master's in Public Health in Environmental Health and Community Health Education, University of Hawaii at Mania, 1979; Ph.D. in Urban Education Curriculum and Instruction, specializing in science and environmental education, University of Wisconsin, Milwaukee, 1989.

Recent publications have included:

Dvornich, K., Tudor, M., and Grue, C.E. 1995. NatureMapping: Assisting management of natural resources through public education and public participation. *Wildlife Society Bulletin,* 23 (4):609-614; Tudor, M.T. 1994. Approaches to teaching environmental problem solving. In Bardwell, L., Monroe., M. & M.T. Tudor. (Eds), *Environmental Problem Solving: Theory, practice and possibilities in environmental education.* Monograph. North American Assn. For Environmental Education. Troy, OH; NAAEE; Tudor, M.T. 1992. Expert and Novice Differences in Strategies to Problem Solve an Environmental Issue. *Contemporary Educational Psychology*. 17, 329-339.

Blair Wolfley - Lower Columbia watershed Team Leader

Blair Wolfley is a member of the Washington State University Extension Faculty, at WSU's Center for Agriculture, Science and Environmental Education in Brush Prairie, WA. He will be responsible for the Clark County Master Watershed Stewards program.

Mr. Wolfley is administrator of WSU Cooperative Extension - Clark County, with 17 office staff. His education leadership responsibilities include programs in agriculture, natural resources, community development and environmental education. Recent efforts include leadership in establishing and continuing development of the Vancouver Environmental Information Center, developing and teaching water quality sections of Master Gardener, Master Composter and Extension Livestock advisory training for Clark and Cowlitz counties. He conducts annual educational programs for water quality related to mud and manure management for small farms. He developed continuing education classes for homeowners on wellhead protection and septic system management.

He chaired Clark County's Open Space Commission for three years, during development of the County open space plan. He has served on Clark County's Groundwater Advisory Board, as a member of the Clark County Salmon Creek/Lakeshore Watershed Plan Implementation jcommittee, member of Clark County Resource Lands Advisory Committee (part of Growth Management Act activities), and has organized stream watch training and Adopt-A-Stream training for Clark County.

Related employment has included:

Water resource and wildland recreation survey research Wyoming Water Resources Research Institute, Laramie WY, 1974-75; investigating political, social, economic, and biological ramifications for fish and wildlife as a result of irrigation development in the Columbia Basin, for Washington Water Research Center, Pullman WA, 1976-78; volunteer recruitment, training and management, WSU Extension, Port Townsend and Vancouver, WA 1979 to present.

Mr. Wolfley holds a Masters in Agricultural Economics, 1975, and Bachelor of Science in Agricultural Business, 1973, both from University of Wyoming.
Recent publications include Wolfley, B., and Schmidt, J., 1992. Clean Water for Washington; Protecting Groundwater; Managing Livestock on Small Acreage *Washington State University Cooperative Extension Bulletin.* He has developed and presented slide

shows on water quality, mud and manure management, for use in Master Gardener and Master Composter training, and for local workshops. Mr. Wolfley has also adapted for Southwest Washington use the WSU publication series, *Sound Gardening with an eye toward water quality.*

Robert G. Stevens, Ph.D. - Lower Yakima Valley team leader

Dr. Stevens is an Extension soil scientist on the Washington State University Cooperative Extension faculty, at the Irrigated Agriculture Research and Extension Center, Prosser, W. He has been at Prosser since 1985.d Approximately 10% of his time will be devoted to MWS.

As Extension soil scientist, Dr. Stevens is responsible for education int he areas of soil, nutrient and water management. Emphasis is on management of nontraditional nutrient sources and protection of water quality. This program is based upon applied research designed to provide Best Management Practices for irrigated agriculture which lead to sustainable practices while protecting the quality of the environment. His previous positions included with Weyerhaeuser Company, 1977-84 and Texas Tech University, 1971-77.

Dr. Stevens was part of the team which developed Master Watershed Stewards in Kittitas County, 1997, and was a teacher for some of the class sessions.

He is the lead person on the Granger Drain Hydrologic Unit Area Project located in the Yakima River Valley. Initiated in 1991, this is a federally funded joint project with the Natural Resources Conservation Service. Project objectives are to improve water quality in irrigation return flows to the Yakima River through education, technical assistance and cost share activities.

Recent publications include:

Stevens, R.G., Ley, T.W., and V.I. Prest. 1997. Adoption of best management practices (BMPS) to meet water quality goals in the Granger Drain Hydrologic Unit Area. *Proceedings of the National Watershed Water Quality Project Symposium.* September 1997. Washington DC; Stevens, R.G., Sobecki, T.M. and Thomas L. Spofford. 1993. Using the phosphorus assessment tool in the field *J, Pro. Ag.* 6(4):487-492; Marx, E.S., J. Hart and R.G. Stevens. 1996. *Soil test interpretation guide.* Oregon State Uni. Extension Service, EC 1478. pg. 7.

Ray Hennekey - Lower Yakima Valley team

Mr. Hennekey is the Yakima Watershed Local Action Team Leader for Washington Dept. Of Ecology. He was instrumental in helping develop the Kittitas County Master Watershed Stewards course. Prior to that he was Ecology's Lower Yakima River coordinator for TMDLs, outreach coordinator for Ecology's water quality program, and taught marine biology and other environmental education classes for Rhode Island Dept.

Of Fish & Wildlife, Rhode Island Dept. Of Parks and Recreation, and Massachusetts Dept. Of Fish & Wildlife. He was a marine biologist with US Environmental Protection Agency for 10 years.

Mr. Hennekey holds a B.S. in Resource Develoment, University of Rhode Island, 1971.

David C. Howard - Lower Columbia watershed team member

Mr. Howard is lead water quality staff member of the Dept. Of Ecology in the Lower Columbia. He has been with Ecology since 1985, as a watershed planner in the water quality program, and other positions in the toxic cleanup program. He serves on the outreach and education committee of the Lower Columbia Steelhead Conservation Initiative, part of the work of the Joint Natural Resources Cabinet.

Mr. Howard has a Bachelor of Arts in economics, public policy and environmental studies, Evergreen State College, 1982. As a board member of Washington Environmental Council, 1971-76, Mr. Howard was active in securing enactment of the Shoreline Management Act and State Environmental Protection Act.

Section 10. Information/technology transfer

MWS will produce a curriculum appropriate for each watershed, developed for public education, and intended for continuous future use in the watersheds by participating agencies or any other group which wishes to strengthen public knowledge.